Claims

 A carboxylic acid compound represented by the following formula, a salt thereof, an ester thereof or a hydrate of them.

$$Y = L = X = T - \left(Z - M - \frac{R^1}{2} W\right)$$
 (I)

In the formula, R¹ represents hydrogen atom, hydroxyl group or a C_{1-6} alkyl group, C_{1-6} alkoxy group, C_{1-6} alkylthio group, C_{1-6} hydroxyalkyl group, C_{1-6} hydroxyalkoxy group, C_{1-6} hydroxyalkylthio group, C_{1-6} aminoalkyl group, C_{1-6} aminoalkoxy group, C_{1-6} aminoalkylthio group, C_{1-6} halogenated alkyl group, C_{1-6} halogenated alkoxy group, C_{1-6} halogenated alkylthio group, C_{2-12} alkoxyalkyl group, C_{2-12} alkoxyalkoxy group, C_{2-12} alkoxyalkylthio group, C_{3-7} cycyloalkyl group, C_{3-7} cycloalkyloxy group, C_{3-7} cycloalkylthio group, C_{2-6} alkenyl group, C_{2-6} alkenyloxy group, C_{2-6} alkenylthio group, C_{2-6} alkynyl group, C_{2-6} alkynyloxy group, C_{2-6} alkynylthio group, C_{6-12} aryl group, C_{6-12} aryloxy group, C_{6-12} arylthio group, C_{7-18} alkylaryl group, C_{7-1} , alkylaryloxy group, C_{7-18} alkylarylthio group, C_{7-18} aralkyl group, C_{7-18} aralkyloxy group or C_{7-18} aralkylthio group, each of which may have one or more substituents; L represents a single or double bond or a C_{1-6} alkylene group, C_{2-6} alkenylene group or C_{2-6} alkynylene group, each of which may have one or more substituents; M represents a single bond or a C_{1-6} alkylene group, C_{2-6} alkenylene group or C_{2-6} alkynylene group, each of which may have one or more substituents; T represents a single bond or a C_{1-3} alkylene group, C_{2-3} alkenylene group or C_{2-3} alkynylene group, each of which may have one or more substituents; W represents 2,4-dioxothiazolidine-5-yl group, 2,4dioxothiazolidine-5-ylidene group, carboxyl group or a group represented by the formula $-CON(R^{w1})R^{w2}$ (wherein R^{w1} and R^{w2} are the same as or different from each other and each represents hydrogen atom, formyl group or a C_{1-6} alkyl group, C_{2-7} aliphatic acyl group or C_{7-19} aromatic acyl group, each of which may have one or more substituents), provided that the case where T is a single bond and W is 2,4-dioxothiazolidine-5-yl group or 2,4-dioxothiazolidine-5-ylidene group in the above definition is excluded; --- represents a single or double bond; X represents oxygen atom, a C_{2-6} alkenylene group which may have one or more substituents, hydroxymethylene group or a group represented by the formula -CQ- (wherein Q represents oxygen atom or sulfur atom), -CQNR*- (wherein Q represents the same group as defined above, and R' represents hydrogen atom, formyl group or a C_{1-6} alkyl group, C_{2-7} aliphatic acyl group or C_{7-19} aromatic acyl group, each of which may have one or more substituents), $-NR^{x}CQ-$ (wherein Q and R^{x} each represent the same group as defined above), -SO₂NR*- (wherein R* represents the same group as defined above), -NR*SO₂- (wherein R* represents the same group as defined above) or -NRx1CQNRx2- (wherein Q represents the same group as defined above, and $R^{\star 1}$ and $R^{\star 2}$ are the same as or different from each other and each represents hydrogen atom, formyl group or a C_{1-6} alkyl group, C_{2-7} aliphatic acyl group or C_{7-19} aromatic acyl group, each of which may have one or more substituents), provided that the case where T is a single bond and X is oxygen atom in the above definition is excluded; Y represents a C_{5-12} aromatic hydrocarbon group or C_{3-7} alicyclic hydrocarbon group which may have one or more substituents and which may have one or more heteroatoms; ring Z represents a C_{5-6} aromatic hydrocarbon group which may have 0 to 4 substituents and which may have one or more hetero atoms; and a group represented by the formula:

(wherein each symbol has the same meaning as defined above) and a group represented by the formula:

(wherein each symbol has the same meaning as defined above) are bound to each other via 3 atoms on ring Z.

- 2. The carboxylic acid compound according to claim 1, a salt thereof, an ester thereof or a hydrate of them, wherein in the formula (I), W is a carboxylic acid.
- 3. The carboxylic acid compound according to claim 1 or 2, a salt thereof, an ester thereof or a hydrate of them, wherein in the formula (I), R^1 is a C_{1-6} alkyl group or C_{1-6} alkoxy group which may have one or more substituents.
- The carboxylic acid compound according to claim 1 or
 a salt thereof, an ester thereof or a hydrate of them, wherein

in the formula (I), ring Z is a benzene ring which may further have 0 to 4 substituents.

- 5. The carboxylic acid compound according to claim 1 or 2, a salt thereof, an ester thereof or a hydrate of them, wherein in the formula (I), X is a group represented by the formula $-\text{CQNR}^{\times}$ (wherein Q and R* represent the same group as defined above) or $-\text{NR}^{\times}\text{CQ}$ (wherein Q and R* represent the same group as defined above).
- 6. The carboxylic acid compound according to claim 1 or 2, a salt thereof, an ester thereof or a hydrate of them, wherein in the formula (I), Y is a C_{5-12} aromatic hydrocarbon group which may have one or more substituents.
- 7. The carboxylic acid compound according to claim 1 or 2, a salt thereof, an ester thereof or a hydrate of them, wherein in the formula (I), L or M is a C_{1-6} alkylene group.
- 8. The carboxylic acid compound according to claim 1 or 2, a salt thereof, an ester thereof or a hydrate of them, wherein in the formula (I), T is a C_{1-3} alkylene group.
- 9. The carboxylic acid compound according to claim 1 or 2, a salt thereof, an ester thereof or a hydrate of them, wherein in the formula (I), R^1 is a C_{1-6} alkyl group or C_{1-6} alkoxy group which may have one or more substituents; and ring Z is a benzene ring which may further have 0 to 4 substituents.
- 10. The carboxylic acid compound according to claim 1 or 9, a salt thereof, an ester thereof or a hydrate of them, wherein in the formula (I), X is a group represented by the formula

-CQNR*- (wherein Q and R* represent the same group as defined above) or -NR*CQ- (wherein Q and R* represent the same group as defined above); and Y is a C_{5-12} aromatic hydrocarbon group which may have one or more substituents.

11. A medicament comprising a carboxylic acid compound represented by the following formula, a salt thereof, an ester thereof or a hydrate of them.

$$Y = L = X = T - \left(Z - M \right) - \left(R^{1} - M \right)$$
 (I

In the formula, R¹ represents hydrogen atom, hydroxyl group or a C_{1-6} alkyl group, C_{1-6} alkoxy group, C_{1-6} alkylthio group, C_{1-6} hydroxyalkyl group, C_{1-6} hydroxyalkoxy group, C_{1-6} hydroxyalkylthio group, C_{1-6} aminoalkyl group, C_{1-6} aminoalkoxy group, C_{1-6} aminoalkylthio group, C_{1-6} halogenated alkyl group, C_{1-6} halogenated alkoxy group, C_{1-6} halogenated alkylthio group, C_{2-12} alkoxyalkyl group, C_{2-12} alkoxyalkoxy group, C_{2-12} alkoxyalkylthio group, C3-7 cycyloalkyl group, C3-7 cycloalkyloxy group, C_{3-7} cycloalkylthio group, C_{2-6} alkenyl group, C_{2-6} alkenyloxy group, C_{2-6} alkenylthio group, C_{2-6} alkynyl group, C_{2-6} alkynyloxy group, C_{2-6} alkynylthio group, C_{6-12} aryl group, C_{6-12} aryloxy group, C_{6-12} arylthio group, C_{7-18} alkylaryl group, C_{7-1} $_{18}$ alkylaryloxy group, $C_{7\text{--}18}$ alkylarylthio group, $C_{7\text{--}18}$ aralkyl group, C_{7-18} aralkyloxy group or C_{7-18} aralkylthio group, each of which may have one or more substituents; L represents a single or double bond or a C_{1-6} alkylene group, C_{2-6} alkenylene group or C_{2-6} alkynylene group, each of which may have one or more

substituents; Mrepresents a single bond or a C1-6 alkylene group, C_{2-6} alkenylene group or C_{2-6} alkynylene group, each of which may have one or more substituents; T represents a single bond or a C_{1-3} alkylene group, C_{2-3} alkenylene group or C_{2-3} alkynylene group, each of which may have one or more substituents; W represents 2,4-dioxothiazolidine-5-yl group, 2,4dioxothiazolidine-5-ylidene group, carboxyl group or a group represented by the formula $-CON(R^{w1})R^{w2}$ (wherein R^{w1} and R^{w2} are the same as or different from each other and each represents hydrogen atom, formyl group or a C_{1-6} alkyl group, C_{2-7} aliphatic acyl group or C7-19 aromatic acyl group, each of which may have one or more substituents), provided that the case where T is a single bond and W is 2,4-dioxothiazolidine-5-yl group or 2,4-dioxothiazolidine-5-ylidene group in the above definition is excluded; === represents a single or double bond; X represents oxygen atom, a C_{2-6} alkenylene group which may have one or more substituents, hydroxymethylene group or a group represented by the formula -CQ- (wherein Q represents oxygen atom or sulfur atom), $-CQNR^{x}-$ (wherein Q represents the same group as defined above, R* represents hydrogen atom, formyl group or a C_{1-6} alkyl group, C_{2-7} aliphatic acyl group or C_{7-19} aromatic acyl group, each of which may have one or more substituents), $-NR^{x}CQ-$ (wherein Q and R^{x} each represent the same group as defined above), $-SO_2NR^x$ - (wherein R^x represents the same group as defined above), -NR*SO₂- (wherein R* represents the same group as defined above) or -NR*1CQNR*2- (wherein Q represents

the same group as defined above; and R^{x1} and R^{x2} are the same as or different from each other and each represents hydrogen atom, formyl group or a C_{1-6} alkyl group, C_{2-7} aliphatic acyl group or C_{7-19} aromatic acyl group, each of which may have one or more substituents), provided that the case where T is a single bond and X is oxygen atom in the above definition is excluded; Y represents a C_{5-12} aromatic hydrocarbon group or C_{3-7} alicyclic hydrocarbon group which may have one or more substituents and which may have one or more heteroatoms; ring Z represents a C_{5-6} aromatic hydrocarbon group which may further have 0 to 4 substituents and which may have one or more heteroatoms; and a group represented by the formula:

(wherein each symbol has the same meaning as defined above) and a group represented by the formula:

$$-M=-L$$
W

(wherein each symbol has the same meaning as defined above) are bound to each other via 3 atoms on ring Z.

- 12. The medicament according to claim 11, which is a medicament based on PPAR α and γ dual agonism.
- 13. The medicament according to claim 11, which is a medicament based on PPAR α , β and γ triple agonism.
- 14. The medicament according to claims 11 to 13, which is an insulin-resistant improver.
 - 15. The medicament according to claims 11 to 13, which

is an agent for preventing or treating diabetes mellitus.

- 16. The medicament according to claims 11 to 13, which is an agent for preventing or treating X syndromes.
- 17. A method for preventing, treating or ameliorating diseases against which PPAR α and γ dual agonism or PPAR α , β and γ triple agonism is efficacious, by administering a pharmacologically effective amount of the compound according to claim 1, a salt thereof, an ester thereof or a hydrate of them to a patient.
- 18. Use of the compound according to claim 1, a salt thereof, an ester thereof or a hydrate of them, for producing an agent for preventing, treating or ameliorating diseases against which PPAR α and γ dual agonism or PPAR α , β and γ triple agonism is efficacious.